CLAIMS

1. Method for producing an optical fiber having low polarization mode dispersion, comprising the steps of

a) providing an optical fiber preform of glass material;

b) heating the glass material of an end portion of the optical fiber preform;

c) drawing the heated glass material at a drawing speed V to form an optical fiber, the drawn glass material having a viscous zone;

d) applying to the optical fiber a substantially sinusoidal spin, which is transmitted to the viscous zone;

characterized in that

the spin function frequency ν, the viscous zone length L and the drawing speed V are such that both a torsion and at least a 50% detorsion are applied to the viscous zone.

2. Method according to claim 1, wherein the spin function frequency ν, the viscous zone length L and the drawing speed V are such that $1.2*L \leq V/\nu \leq 6.7*L$.

3. Method according to claim 1 or 2, wherein the spin function frequency ν, the viscous zone length L and the drawing speed V are such that both a torsion and at least a 60% detorsion are applied to the viscous zone.

4. Method according to claim 3, wherein the spin function frequency ν, the viscous zone length L and the drawing speed V are such that $1.7*L \leq V/\nu \leq 3.3*L$.

5. Method according to any of claims 1 to 4, wherein the spin function frequency ν, the spin function amplitude θ_0 and the drawing speed V are such that the maximum applied torsion is at least of 4 turns/meter.

6. Method according to any of claims 1 to 5, wherein the

spin function frequency ν, the spin function amplitude θ_0 and the drawing speed V are such that the maximum frozen-in torsion is no more than 4 turns/meter.

7. Method according to claim 6 when depending on claim 5, wherein the spin function amplitude θ_0 (in turns) is such that $(2V)/(\nu\pi) \leq \theta_0 \leq (2V)/[\nu\pi(1-R)]$, wherein V is the drawing speed (in meter/second), ν is the spin function frequency (in Hz), R is the ratio $(T_{appl}-T_{fr})/T_{appl}$, T_{appl} is the maximum actually applied torsion and T_{fr} is the maximum frozen-in torsion.